Teacher's Scoring Guide

Grade 7
Science

Fall 2008

Indiana Statewide Testing for Educational Progress

20945-W

INTRODUCTION

During the fall of 2008, Indiana students in Grades 3 through 8 and Grade 10 participated in the administration of *ISTEP+*. The test for *ISTEP+* Fall 2008 consisted of a multiple-choice section and an applied skills section. For the fall testing, the multiple-choice section was machine-scored. The applied skills section, which consisted of open-ended questions, was hand-scored.

Test results for both the multiple-choice and applied skills sections as well as images of the applied skills student responses will be available online in late November 2008. *ISTEP+* Student Labels and Student Reports will be sent to the schools in early December 2008. It is the expectation of the Indiana Department of Education that schools will take this opportunity to invite students and parents to sit down with teachers to discuss the results. To support this endeavor, the Indiana Department of Education has prepared the following *Teacher's Scoring Guide.* The purpose of this guide is to help teachers to:

- understand the methods used to score the *ISTEP+* Fall 2008 applied skills section, and
- discuss and interpret these results with students and parents.

In order to use this guide effectively, you will also need the Student Report and a copy of the student's applied skills responses.

There are three scoring guides for Grade 7, English/Language Arts, Mathematics, and Science. In this Science guide, you will find:

- an introduction,
- a list of the Science Grade 6 Indiana Academic Standards,*
- rubrics (scoring rules) used to score the open-ended questions,
- anchor papers that are actual examples of student work (transcribed in this guide for clarity and ease of reading), and
- descriptions of the ways in which the response meets the rubric criteria for each of the score points.

When you review the contents of the scoring guide, keep in mind that this guide is an overview. If you have questions, write via e-mail (istep@doe.in.gov) or call the Indiana Department of Education at (317) 232-9050.

* Because *ISTEP+* is administered early in the fall, the Grade 7 Science assessment is based on the academic standards through Grade 6.

INTRODUCTION TO THE SCIENCE APPLIED SKILLS SECTION

The applied skills section that students responded to this past fall in Grade 7 allowed the students to demonstrate their understanding of Science in a variety of ways, such as interpreting models, making conclusions, analyzing data, making predictions, explaining results, or applying concepts.

STRUCTURE

The applied skills section for Grade 7 Science was given in Test 11, which consisted of eight open-ended questions.

SCORING

Each open-ended question was scored according to its own rubric. A rubric is a description of student performance that clearly articulates the requirements for each of the score points. Scoring rubrics are essential because they ensure that all papers are scored objectively. Each rubric for this administration of the *ISTEP+* Grade 7 Science assessment has a maximum possible score of two score points.

NOTE: Images of the questions and student work have been reduced to fit the format of this guide.

Rubrics are established prior to testing to describe the performance criteria for each score point. The performance criteria determine the number of score points possible for each question. This process ensures that all responses are judged objectively.

1. Students should not be penalized for:
   - spelling or grammar errors
   - using abbreviations; for example, *cm* or *centimeters* would be acceptable
2. Students should be given credit for:
   - answers not written on the answer line (however, in some cases, because a question may consist of different parts, placement of an answer on the answer line is necessary to determine to which part the student intended to respond)

CONDITION CODES

If a response is unscorable, it is assigned one of the following condition codes:

A Blank/No response/Refusal
B Illegible
C Written predominantly in a language other than English
D Insufficient response/Copied from text
E Response not related to test question or scoring rule

SCIENCE GRADE 6
INDIANA ACADEMIC STANDARDS

- **The Nature of Science and Technology**
  Students design investigations. They use computers and other technology to collect and analyze data; they explain findings and can relate how they conduct investigations to how the scientific enterprise functions as a whole. Students understand that technology has allowed humans to do many things, yet it cannot always provide solutions to our needs.

- **Scientific Thinking**
  Students use computers and other tools to collect information, calculate, and analyze data. They prepare tables and graphs, using these to summarize data and identify relationships.

- **The Physical Setting**
  Students collect and organize data to identify relationships between physical objects, events, and processes. They use logical reasoning to question their own ideas as new information challenges their conceptions of the natural world.

- **The Living Environment**
  Students recognize that plants and animals obtain energy in different ways, and they can describe some of the internal structures of organisms related to this function. They examine the similarities and differences between humans and other species. They use microscopes to observe cells and recognize cells as the building blocks of all life.

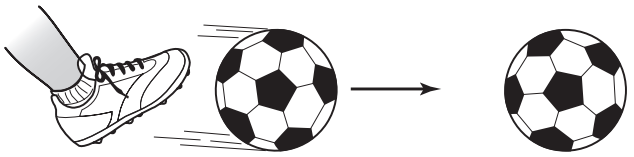
- **The Mathematical World**
  Students apply mathematics in scientific contexts. They use mathematical ideas, such as relations between operations, symbols, shapes in three dimensions, statistical relationships, and the use of logical reasoning in the representation and synthesis of data.

- **Historical Perspectives**
  Students gain understanding of how the scientific enterprise operates through examples of historical events. Through the study of these events, they understand that new ideas are limited by the context in which they are conceived, are often rejected by the scientific establishment, sometimes spring from unexpected findings, and grow or transform slowly through the contributions of many different investigators.

- **Common Themes**
  Students use mental and physical models to conceptualize processes. They recognize that many systems have feedback mechanisms that limit changes.

Test 11—Question 1: The Physical Setting

1 A soccer team is kicking around soccer balls before practice. The diagram below shows how a student kicked Ball A toward Ball B, which was not moving.



Ball A Ball B

Describe what will happen to the SPEED of each soccer ball when Ball A hits Ball B.

_____

_____

_____

If Ball A had been kicked with a greater force, then how would this have changed what happens to the speed of Ball B?

_____

_____

Key Elements:

- Ball A will decrease in speed. AND Ball B will increase in speed/start moving.

AND

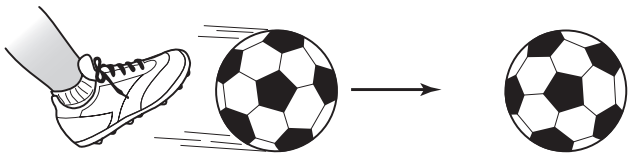
- Ball B would have had a greater increase in speed.

Rubric:

2 points	Two key elements
1 point	One key element
0 points	Other

SCORE POINT 2

1 A soccer team is kicking around soccer balls before practice. The diagram below shows how a student kicked Ball A toward Ball B, which was not moving.



Describe what will happen to the SPEED of each soccer ball when Ball A hits Ball B.

Ball A will slow down while ball B speeds up.

If Ball A had been kicked with a greater force, then how would this have changed what happens to the speed of Ball B?

Ball A would've hit ball B harder causing it to move faster.

Test 11—Question 1
Score Point 2

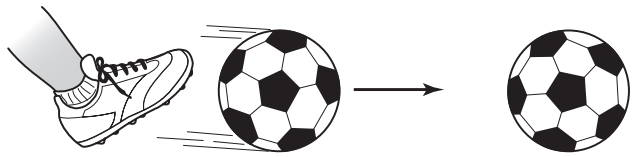
This response correctly describes how the speed of both balls would be affected when Ball A hits Ball B and correctly describes how the speed of Ball B would be affected if Ball A had been kicked with greater force. The response receives a Score Point 2.

Test 11—Question 1
Score Point 1

This response gives an insufficient description of how the speed of both balls would be affected when Ball A hits Ball B. However, the student correctly describes how the speed of Ball B would be affected if Ball A had been kicked with greater force. Therefore, this response receives a Score Point 1.

SCORE POINT 1

1 A soccer team is kicking around soccer balls before practice. The diagram below shows how a student kicked Ball A toward Ball B, which was not moving.



Describe what will happen to the SPEED of each soccer ball when Ball A hits Ball B.

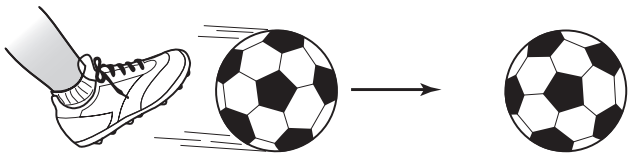
Ball A will hit Ball B and it will move out of the spot it was in.

If Ball A had been kicked with a greater force, then how would this have changed what happens to the speed of Ball B?

The change will be that Ball B will go faster.

SCORE POINT 0

1 A soccer team is kicking around soccer balls before practice. The diagram below shows how a student kicked Ball A toward Ball B, which was not moving.



Describe what will happen to the SPEED of each soccer ball when Ball A hits Ball B.

It will slow down.

If Ball A had been kicked with a greater force, then how would this have changed what happens to the speed of Ball B?

It will go a littlel fast.

Test 11—Question 1
Score Point 0

This response gives an insufficient description of how the speed of both balls would be affected when Ball A hits Ball B and gives an insufficient description of how the speed of Ball B would be affected if Ball A had been kicked with greater force (because the response does not describe how the speed of Ball B changed when compared with its earlier speed). Therefore, this response receives a Score Point 0.

Test 11—Question 2: Scientific Thinking

2 The table below shows data for four of the planets in our solar system.

Data for Four Planets

	Venus	Earth	Mars	Jupiter
Distance from Sun (in millions of kilometers)	108	149	228	778
Time of Rotation (in Earth days)	243	1	1	0.4
Time of Revolution (in Earth days)	225	365	687	4,330
Average Surface Temperature (in degrees Celsius)	453	8	-43	-153

Which planet has the LONGEST time of rotation?

_____

Which planet has the COLDEST surface temperature?

_____

Describe how the distance from the sun affects the time of revolution for the planets in the table.

_____

_____

Key Elements:

- Venus AND Jupiter

AND

Any one of the following:

- Planets that are closer to the sun have shorter revolution times.
- Planets that are farther away from the sun have longer revolution times.

Rubric:

2 points	Two key elements
1 point	One key element
0 points	Other

SCORE POINT 2

2 The table below shows data for four of the planets in our solar system.

Data for Four Planets

	Venus	Earth	Mars	Jupiter
Distance from Sun (in millions of kilometers)	108	149	228	778
Time of Rotation (in Earth days)	243	1	1	0.4
Time of Revolution (in Earth days)	225	365	687	4,330
Average Surface Temperature (in degrees Celsius)	453	8	-43	-153

Which planet has the LONGEST time of rotation?

venus

Which planet has the COLDEST surface temperature?

Jupiter

Describe how the distance from the sun affects the time of revolution for the planets in the table.

The further the planets are to the sun the longer time its revolution is.

Test 11—Question 2
Score Point 2

This response correctly identifies the planet that has the longest time of rotation and correctly identifies the planet that has the coldest surface temperature. The student correctly explains how the distance from the sun affects the time of revolution for the planets. The response receives a Score Point 2.

Test 11—Question 2
Score Point 1

This response correctly identifies the planet that has the longest time of rotation and correctly identifies the planet that has the coldest surface temperature. However, the student gives an insufficient explanation of how the distance from the sun affects the time of revolution for the planets. Therefore, this response receives a Score Point 1.

SCORE POINT 1

2 The table below shows data for four of the planets in our solar system.

Data for Four Planets

	Venus	Earth	Mars	Jupiter
Distance from Sun (in millions of kilometers)	108	149	228	778
Time of Rotation (in Earth days)	243	1	1	0.4
Time of Revolution (in Earth days)	225	365	687	4,330
Average Surface Temperature (in degrees Celsius)	453	8	-43	-153

Which planet has the LONGEST time of rotation?

Venus

Which planet has the COLDEST surface temperature?

Jupiter

Describe how the distance from the sun affects the time of revolution for the planets in the table.

The distance from the sun affects the time of revolution because the revolution is longer depending on how far you are from the sun.

SCORE POINT 0

2 The table below shows data for four of the planets in our solar system.

Data for Four Planets

	Venus	Earth	Mars	Jupiter
Distance from Sun (in millions of kilometers)	108	149	228	778
Time of Rotation (in Earth days)	243	1	1	0.4
Time of Revolution (in Earth days)	225	365	687	4,330
Average Surface Temperature (in degrees Celsius)	453	8	-43	-153

Which planet has the LONGEST time of rotation?

Jupiter

Which planet has the COLDEST surface temperature?

Jupiter

Describe how the distance from the sun affects the time of revolution for the planets in the table.

Venus is 108, Earth is 149, Mars is 228 and Jupiter is 778 distance from the sun.

Test 11—Question 2
Score Point 0

This response incorrectly identifies the planet that has the longest time of rotation and correctly identifies the planet that has the coldest surface temperature. The student does not explain how the distance from the sun affects the time of revolution for the planets. Therefore, this response receives a Score Point 0.

Test 11—Question 3: The Physical Setting

3 Ground-level ozone is harmful to breathe. During hot sunny days, chemicals released from the use of fossil fuels can cause ground-level ozone to form.

Describe TWO different ways a person could use less fossil fuels during hot sunny days.

1) _____

_____

2) _____

_____

Key Elements:

Any two of the following:

- mowing the lawn in the evening when it is cooler
- driving vehicles in the evening when it is cooler
- carpooling during the day
- riding bicycles or walking to work/school instead of driving
- other valid activity that could reduce the amount of ground-level ozone formed on hot summer days

Rubric:

2 points	Two key elements
1 point	One key element
0 points	Other

SCORE POINT 2

3 Ground-level ozone is harmful to breathe. During hot sunny days, chemicals released from the use of fossil fuels can cause ground-level ozone to form.

Describe TWO different ways a person could use less fossil fuels during hot sunny days.

1) Do not drive as much that day.

2) Don't cut your lawns, that day too.

Test 11—Question 3
Score Point 2

This response correctly describes two different ways a person could use less fossil fuels during hot sunny days. The response receives a Score Point 2.

SCORE POINT 1

3 Ground-level ozone is harmful to breathe. During hot sunny days, chemicals released from the use of fossil fuels can cause ground-level ozone to form.

Describe TWO different ways a person could use less fossil fuels during hot sunny days.

1) Ride a bike.

2) Walk.

Test 11—Question 3
Score Point 1

This response correctly describes one way a person could use less fossil fuels during hot sunny days. However, the second response is a restatement of the first response (because riding a bike and walking are both activities done to avoid driving a vehicle). Therefore, this response receives a Score Point 1.

Test 11—Question 3
Score Point 0

This response does not describe any ways that a person could use less fossil fuels on hot sunny days. (Instead, the student restates a portion of the stem in the first response and describes what could be done to avoid breathing the ground-level ozone in the second response.) Therefore, this response receives a Score Point 0.

SCORE POINT 0

3 Ground-level ozone is harmful to breathe. During hot sunny days, chemicals released from the use of fossil fuels can cause ground-level ozone to form.

Describe TWO different ways a person could use less fossil fuels during hot sunny days.

1) Only use the fossil fuels on cooler days.

2) One the days they use fossil fules, wear a breathing mask, if you live near or work there.

Test 11—Question 4: Common Themes

4 The diagram below shows a food chain.

If the grass population increased, how would the June bug population change?

_____

_____

If the grass population died during a drought, how would the Northern flicker population change?

_____

_____

Key Elements:

- June bug population would increase (because more grass would result in more food to support the June bugs).

AND

Any one of the following:

- Northern flicker population would decrease (because less grass would result in fewer June bugs to support the Northern flickers).
- Northern flicker population would migrate somewhere else (because less grass would result in fewer June bugs to support the Northern flickers).

Rubric:

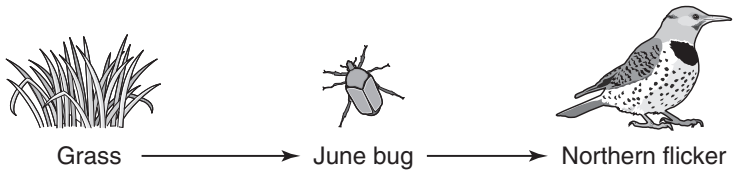
2 points	Two key elements
1 point	One key element
0 points	Other

Test 11—Question 4
Score Point 2

This response correctly describes how the June bug population would change if the grass population increased and correctly describes how the Northern flicker population would change if the grass population died during a drought. The response receives a Score Point 2.

SCORE POINT 2

4 The diagram below shows a food chain.



If the grass population increased, how would the June bug population change?

The june bugs population would increase

If the grass population died during a drought, how would the Northern flicker population change?

The Northern flicker population would decrease.

SCORE POINT 1

4 The diagram below shows a food chain.

If the grass population increased, how would the June bug population change?

The june bug population would increase to.

If the grass population died during a drought, how would the Northern flicker population change?

It would be hard because the june bug population would decrease

Test 11—Question 4
Score Point 1

This response correctly describes how the June bug population would change if the grass population increased. However, the student does not describe how the Northern flicker population would change if the grass population died during a drought. (Instead, the student describes how the June bug population would change if the grass population died during a drought.) Therefore, this response receives a Score Point 1.

Test 11—Question 4
Score Point 0

This response incorrectly describes how the June bug population would change if the grass population increased and does not describe how the Northern flicker population would change if the grass population died during a drought. Therefore, this response receives a Score Point 0.

SCORE POINT 0

4 The diagram below shows a food chain.

If the grass population increased, how would the June bug population change?

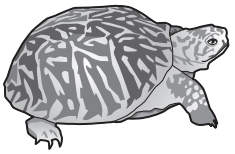
There would be no June bugs.

If the grass population died during a drought, how would the Northern flicker population change?

The June bugs would leave and the Northern flicker would have nothing to eat.

Test 11—Question 5: The Living Environment

5 The picture below shows an Eastern box turtle, which lives in the forests and meadows of Indiana.



Eastern box turtle

Describe ONE characteristic of an Eastern box turtle that helps it to survive in Indiana.

_____

Explain how this characteristic helps the Eastern box turtle to survive in Indiana.

_____

_____

Describe an environment where the Eastern box turtle would NOT survive.

_____

Explain why the Eastern box turtle would NOT survive in this environment.

_____

_____

Key Elements:

Any one of the following:

- shell AND protection from predators
- coloring AND camouflage from predators
- eats plants and animals typically found in forests and meadows AND Indiana has these types of habitats
- cold-blooded AND hibernates during winter and regulates body temperature during other seasons by basking in sun or burrowing in soil
- other valid characteristic of Eastern box turtle AND any valid explanation of how the characteristic helps the turtle to survive in Indiana

AND

Any one of the following:

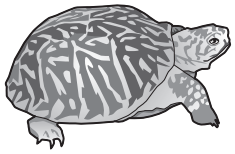
- arctic/polar AND too cold/no food source/no camouflage
- ocean AND cannot breathe underwater/cannot swim
- desert AND too hot/no food source/no camouflage
- other valid environment where Eastern box turtle could not survive AND any valid explanation why the turtle would not survive in that environment

Rubric:

2 points	Two key elements
1 point	One key element
0 points	Other

SCORE POINT 2

5 The picture below shows an Eastern box turtle, which lives in the forests and meadows of Indiana.



Eastern box turtle

Describe ONE characteristic of an Eastern box turtle that helps it to survive in Indiana.

The /coloration/ pattern / on its shell

Explain how this characteristic helps the Eastern box turtle to survive in Indiana.

So it can camoflage it's self from preadator's.

Describe an environment where the Eastern box turtle would NOT survive.

In the ice, snow covered antartic

Explain why the Eastern box turtle would NOT survive in this environment.

It's pattern would stand out to predator's

Test 11—Question 5 Score Point 2

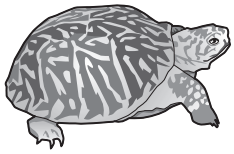
This response correctly describes a characteristic that helps the Eastern box turtle survive in Indiana and explains how that characteristic helps the Eastern box turtle survive. The student correctly describes an environment where the Eastern box turtle could not survive and explains why the Eastern box turtle would not survive there. The response receives a Score Point 2.

Test 11—Question 5
Score Point 1

This response correctly describes a characteristic that helps the Eastern box turtle survive in Indiana and explains how that characteristic helps the Eastern box turtle survive. The student correctly describes an environment where the Eastern box turtle could not survive. However, the student does not explain why the Eastern box turtle would not survive in that environment. Therefore, this response receives a Score Point 1.

SCORE POINT 1

5 The picture below shows an Eastern box turtle, which lives in the forests and meadows of Indiana.



Eastern box turtle

Describe ONE characteristic of an Eastern box turtle that helps it to survive in Indiana.

It has a hard shell to protect it from enemies.

Explain how this characteristic helps the Eastern box turtle to survive in Indiana.

It helps it to survive because if an animal attacks it then it can go inside its hard shell.

Describe an environment where the Eastern box turtle would NOT survive.

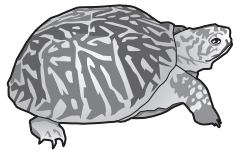
It would not survive in an ocean.

Explain why the Eastern box turtle would NOT survive in this environment.

It would not survive in an ocean because it would die.

SCORE POINT 0

5 The picture below shows an Eastern box turtle, which lives in the forests and meadows of Indiana.



Eastern box turtle

Describe ONE characteristic of an Eastern box turtle that helps it to survive in Indiana.

It is a box turtle.

Explain how this characteristic helps the Eastern box turtle to survive in Indiana.

It will sleep in a box.

Describe an environment where the Eastern box turtle would NOT survive.

The Box turtle will not servive in the artic.

Explain why the Eastern box turtle would NOT survive in this environment.

Because we have rain, snow, hot sun years.

Test 11—Question 5
Score Point 0

This response does not describe a characteristic that helps the Eastern box turtle survive in Indiana and does not explain how that characteristic helps the Eastern box turtle survive. The student correctly describes an environment where the Eastern box turtle could not survive. However, the student does not explain why the Eastern box turtle would not survive in that environment. Therefore, this response receives a Score Point 0.

Test 11—Question 6: The Mathematical World

6 A scientist is studying the effect of a new medicine on a certain disease. After collecting the data, he decides to use only some of the data so he can analyze the results faster.

Explain TWO different reasons why the scientist's conclusions might be INCORRECT because only some of the data is analyzed.

1) _____

_____

2) _____

_____

Key Elements:

Any two of the following:

- The smaller data set may not be a large enough sample size.
- The smaller data set may not accurately represent the complete data set.
- The smaller data set may be more affected by unusual data (extremes/outliers), compared to the complete data set.
- Unusual data (extremes/outliers) may be missing from the smaller data set.
- Patterns/trends may be missing/inaccurate in the smaller data set, compared to the complete data set.
- other valid reason why the scientist's conclusions might be incorrect if only some of the data collected is analyzed

Rubric:

2 points	Two key elements
1 point	One key element
0 points	Other

SCORE POINT 2

6 A scientist is studying the effect of a new medicine on a certain disease. After collecting the data, he decides to use only some of the data so he can analyze the results faster.

Explain TWO different reasons why the scientist's conclusions might be INCORRECT because only some of the data is analyzed.

1) they may not have analized the most important data in the set

2) they may have kept in the "outlier" and offset it very much

Test 11—Question 6
Score Point 2

This response correctly explains two different reasons why the scientist's conclusions might be incorrect if only a portion of the data is analyzed. The response receives a Score Point 2.

SCORE POINT 1

6 A scientist is studying the effect of a new medicine on a certain disease. After collecting the data, he decides to use only some of the data so he can analyze the results faster.

Explain TWO different reasons why the scientist's conclusions might be INCORRECT because only some of the data is analyzed.

1) Because he might leave out some of the biggest information.

2) Also some of the information left out could be the most important.

Test 11—Question 6
Score Point 1

This response correctly explains one reason why the scientist's conclusions might be incorrect if only a portion of the data is analyzed. However, the student restates the same answer in the second response. Therefore, this response receives a Score Point 1.

Test 11—Question 6
Score Point 0

This response does not explain any reasons why the scientist's conclusions might be incorrect if only a portion of the data is analyzed. (Instead, the student restates portions of the stem in each response.) Therefore, this response receives a Score Point 0.

SCORE POINT 0

6 A scientist is studying the effect of a new medicine on a certain disease. After collecting the data, he decides to use only some of the data so he can analyze the results faster.

Explain TWO different reasons why the scientist's conclusions might be INCORRECT because only some of the data is analyzed.

1) Because he would only use Some of the Data.

2) We would want to get done faster.

Test 11—Question 7: The Living Environment

7 A population of foxes lives in a forest. Although the foxes have many similar features, some of the individual foxes have features that give them an advantage over the other foxes. For example, some foxes have bigger ears than other foxes. These bigger ears allow them to hear their prey from farther away compared to other foxes.

Give ONE other example of a physical feature that would make one fox better able to hunt animals, compared to the other foxes.

_____

_____

Give ONE example of a physical feature that would make one fox better able to stay warm, compared to the other foxes, if the climate became much colder.

_____

_____

Key Elements:

Any one of the following:

- larger/sharper teeth
- longer/sharper claws
- longer legs (runs faster)
- stronger body
- better vision
- better sense of smell
- other valid physical feature of a fox that would make it better able to hunt

AND

Any one of the following:

- thicker fur
- ability to grow thicker fur for winter
- smaller ears
- shorter tail/legs
- larger body size
- other valid physical feature of a fox that would make it better able to stay warm in a colder climate

Rubric:

2 points	Two key elements
1 point	One key element
0 points	Other

SCORE POINT 2

7 A population of foxes lives in a forest. Although the foxes have many similar features, some of the individual foxes have features that give them an advantage over the other foxes. For example, some foxes have bigger ears than other foxes. These bigger ears allow them to hear their prey from farther away compared to other foxes.

Give ONE other example of a physical feature that would make one fox better able to hunt animals, compared to the other foxes.

They could have longer legs so that they can run faster to catch the prey.

Give ONE example of a physical feature that would make one fox better able to stay warm, compared to the other foxes, if the climate became much colder.

The fox could have more fur than the other one so that ables them to keep warm.

Test 11—Question 7
Score Point 2

This response correctly gives an example of a physical feature that would make one fox better able than other foxes to hunt and correctly gives an example of a physical feature that would make one fox better able than other foxes to stay warm in a colder climate. The response receives a Score Point 2.

Test 11—Question 7
Score Point 1

This response incorrectly gives an example of a physical feature that would make one fox better able than other foxes to hunt (because the student repeats the same feature that was given in the stem). However, the student correctly gives an example of a physical feature that would make one fox better able than other foxes to stay warm in a colder climate. Therefore, this response receives a Score Point 1.

SCORE POINT 1

7 A population of foxes lives in a forest. Although the foxes have many similar features, some of the individual foxes have features that give them an advantage over the other foxes. For example, some foxes have bigger ears than other foxes. These bigger ears allow them to hear their prey from farther away compared to other foxes.

Give ONE other example of a physical feature that would make one fox better able to hunt animals, compared to the other foxes.

bigger ears

Give ONE example of a physical feature that would make one fox better able to stay warm, compared to the other foxes, if the climate became much colder.

some foxes have thicker fur.

SCORE POINT 0

7 A population of foxes lives in a forest. Although the foxes have many similar features, some of the individual foxes have features that give them an advantage over the other foxes. For example, some foxes have bigger ears than other foxes. These bigger ears allow them to hear their prey from farther away compared to other foxes.

Give ONE other example of a physical feature that would make one fox better able to hunt animals, compared to the other foxes.

No noise from other foxes

Give ONE example of a physical feature that would make one fox better able to stay warm, compared to the other foxes, if the climate became much colder.

they huddle together

Test 11—Question 7
Score Point 0

This response does not give an example of a physical feature that would make one fox better able than other foxes to hunt and does not give an example of a physical feature that would make one fox better able than other foxes to stay warm in a colder climate. Therefore, this response receives a Score Point 0.

Test 11—Question 8: The Nature of Science and Technology

8 Ruby and Simon each tested two different brands of baseballs to determine which brand went farther when hit with a bat.

On Tuesday, Ruby went to a field and hit each baseball off a tee. She measured the distance from the tee to where each ball stopped. Ruby determined that Brand A could be hit farther than Brand B.

On Wednesday, Simon went to a different field and followed the same steps as Ruby. However, Simon determined that Brand B could be hit farther than Brand A.

Give TWO different reasons that could explain why their results were different from each other.

1) _____

_____

2) _____

_____

Key Elements:

Any two of the following:

- The students may have used different bats.
- The tests were done on different days, which could have had different weather/winds.
- The tests were done at different fields, which may have affected how far the baseballs rolled after landing.
- The baseballs may have been hit with different forces/strengths (e.g., Ruby may have hit brand A harder than Brand B, Ruby might have hit harder than Simon, etc.).
- The baseballs may have been hit at different angles off the tee.
- Each student only did one trial for each baseball.
- other valid reason that could explain why their results were different from each other

Rubric:

2 points	Two key elements
1 point	One key element
0 points	Other

Test 11—Question 8
Score Point 2

This response correctly gives two different reasons for the differences in the students' baseball test results. The response receives a Score Point 2.

SCORE POINT 2

8 Ruby and Simon each tested two different brands of baseballs to determine which brand went farther when hit with a bat.

On Tuesday, Ruby went to a field and hit each baseball off a tee. She measured the distance from the tee to where each ball stopped. Ruby determined that Brand A could be hit farther than Brand B.

On Wednesday, Simon went to a different field and followed the same steps as Ruby. However, Simon determined that Brand B could be hit farther than Brand A.

Give TWO different reasons that could explain why their results were different from each other.

1) Ruby and Simon have different strengths.

2) The tee could have been at a different height.

SCORE POINT 1

8 Ruby and Simon each tested two different brands of baseballs to determine which brand went farther when hit with a bat.

On Tuesday, Ruby went to a field and hit each baseball off a tee. She measured the distance from the tee to where each ball stopped. Ruby determined that Brand A could be hit farther than Brand B.

On Wednesday, Simon went to a different field and followed the same steps as Ruby. However, Simon determined that Brand B could be hit farther than Brand A.

Give TWO different reasons that could explain why their results were different from each other.

1) Ruby hit off of a diffrent feild then Simon.

2) They could have used diffrent bats then one another.

Test 11—Question 8
Score Point 1

This response gives one insufficient reason for the differences in the students' baseball test results and gives one correct reason for the differences in the students' baseball test results. Therefore, this response receives a Score Point 1.

Test 11—Question 8
Score Point 0

This response gives an insufficient reason for the differences in the students' baseball test results. The student then restates the same insufficient reason in the second response. Therefore, this response receives a Score Point 0.

SCORE POINT 0

8 Ruby and Simon each tested two different brands of baseballs to determine which brand went farther when hit with a bat.

On Tuesday, Ruby went to a field and hit each baseball off a tee. She measured the distance from the tee to where each ball stopped. Ruby determined that Brand A could be hit farther than Brand B.

On Wednesday, Simon went to a different field and followed the same steps as Ruby. However, Simon determined that Brand B could be hit farther than Brand A.

Give TWO different reasons that could explain why their results were different from each other.

1) Ruby went on Tuesday.

2) Simon went on Wednesday.

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Grade 7
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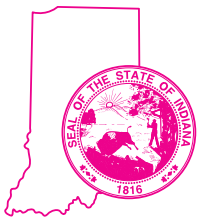

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